

WHAT IS CLAIMED IS:

1. A semiconductor light emitting device comprising:
a semiconductor substrate;
a first multilayered reflection film on the
5 semiconductor substrate;
a light emission layer on the first multilayered
reflection film;
a second multilayered reflection film made of
 $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$) on the light emission
10 layer;
a semiconductor layer on the second multilayered
reflection film; and
a current constriction layer on the semiconductor
layer,
15 wherein the first multilayered reflection film
and the second multilayered reflection film form a
resonator with a specified interval, and the light emission
layer is formed in a position of an antinode of a standing
wave inside the resonator, and
20 wherein the semiconductor layer has a value
obtained by dividing resistivity by thickness being 1×10^3
 Ω or more.
2. A semiconductor light emitting device comprising:
a semiconductor substrate;
25 a first multilayered reflection film on the

semiconductor substrate;

a light emission layer on the first multilayered reflection film;

a second multilayered reflection film made of
5 $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$) on the light emission layer; and

a current constriction layer on the second multilayered reflection film,

wherein the first multilayered reflection film
10 and the second multilayered reflection film form a resonator with a specified interval, and the light emission layer is formed in a position of an antinode of a standing wave inside the resonator, and

wherein a percentage of a current diffused to an
15 outside of a current flow pass formed in the current constriction layer is 25% or less of a total current applied to the current flow pass.

3. The semiconductor light emitting device as defined in Claim 1, further comprising a current diffusion
20 layer on the current constriction layer.

4. The semiconductor light emitting device as defined in Claim 2, further comprising a current diffusion layer on the current constriction layer.

5. The semiconductor light emitting device as
25 defined in Claim 1, wherein

the semiconductor substrate is made of GaAs,

the light emission layer is made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$
($0 \leq y \leq 1$, $0 \leq z \leq 1$), and

between the second multilayered reflection film
5 and the current constriction layer, there is provided a
semiconductor layer made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z$
 ≤ 1) or GaP.

6. The semiconductor light emitting device as
defined in Claim 2, wherein

10 the semiconductor substrate is made of GaAs,
the light emission layer is made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$
($0 \leq y \leq 1$, $0 \leq z \leq 1$), and

between the second multilayered reflection film
and the current constriction layer, there is provided a
15 semiconductor layer made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z$
 ≤ 1) or GaP.

7. The semiconductor light emitting device as
defined in Claim 1, wherein

the semiconductor substrate is made of GaAs,

20 between the second multilayered reflection film
and the current constriction layer, there is provided a
semiconductor layer made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z$
 ≤ 1) or GaP, and

the current constriction layer is made of
25 $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$) or GaP.

8. The semiconductor light emitting device as defined in Claim 2, wherein

the semiconductor substrate is made of GaAs,

between the second multilayered reflection film

5 and the current constriction layer, there is provided a semiconductor layer made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$) or GaP, and

the current constriction layer is made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$) or GaP.

10 9. The semiconductor light emitting device as defined in Claim 1, wherein

the semiconductor substrate is made of GaAs,

between the second multilayered reflection film

and the current constriction layer, there is provided a

15 semiconductor layer made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$) or GaP,

a current diffusion layer is provided on the current constriction layer, and

the current diffusion layer is made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$).

20 10. The semiconductor light emitting device as defined in Claim 2, wherein

the semiconductor substrate is made of GaAs,

between the second multilayered reflection film

25 and the current constriction layer, there is provided a

semiconductor layer made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$) or GaP,

a current diffusion layer is provided on the current constriction layer, and

5 the current diffusion layer is made of $\text{Al}_y\text{Ga}_z\text{In}_{1-y-z}\text{P}$ ($0 \leq y \leq 1$, $0 \leq z \leq 1$).